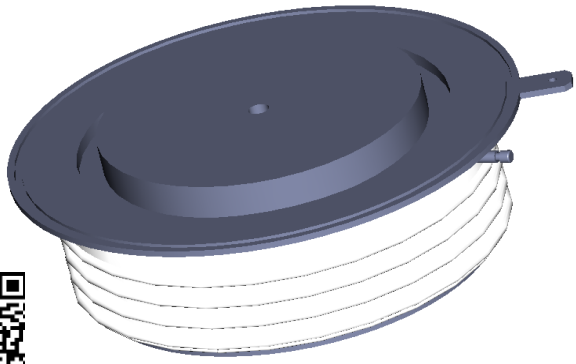
Green Power Solutions Srl
Web: www.gpsemi.it e-mail: info@gpsemi.it
Phone: +39-011-988 2251
Fax: +39-011-988 1358
http://gpsemi.it/pdf/GPTP5125.pdf



GPTP5125

PHASE CONTROLLED SCR

High reliability operation

DC power supply

AC drives

VOLTAGE UP TO	**4200**	**V**
AVERAGE CURRENT	**1250**	**A**
SURGE CURRENT	**15**	**kA**

BLOCKING CHARACTERISTICS

Characteristic		Conditions	Value	
V_{RRM}	Repetitive peak reverse voltage		4200	V
V_{RSM}	Non-repetitive peak reverse voltage		4300	V
V_{DRM}	Repetitive peak off-state voltage		4300	V
I_{DRM}	Repetitive peak off-state current, max.	V_{DRM}, single phase, half wave, Tj = Tjmax	200	mA
I_{RRM}	Repetitive peak reverse current, max.	V_{RRM}, single phase, half wave, Tj = Tjmax	200	mA

ON-STATE CHARACTERISTICS

$I_{T(AV)}$	Average on-state current	Sine wave,180° conduction, Th = 55 °C	1250	A
$I_{T(RMS)}$	R.M.S. on-state current	Sine wave,180° conduction, Th = 55 °C	1963	A
I_{TSM}	Surge on-state current	Non rep. half sine wave, 50 Hz, V_R = 0 V, $T_j = T_{jmax}$	15	kA
I^2t	I^2 t for fusing coordination		1125	kA^2s
$V_{T(TO)}$	Threshold voltage	$T_j = T_{jmax}$	0.90	V
r_T	On-state slope resistance	$T_j = T_{jmax}$	0.565	mΩ
V_{TM}	Peak on-state voltage, max	On-state current I_T = 2000 A , Tj = Tjmax	2.03	V
I_H	Holding current, max	T_j = 25 °C	80	mA
I_L	Latching current, typ	T_j = 25 °C	500	mA

TRIGGERING CHARACTERISTICS

V_{GT}	Gate trigger voltage	T_j = 25 °C, V_D = 5 V	3	V
I_{GT}	Gate trigger current	T_j = 25 °C, V_D = 5 V	400	mA
V_{GD}	Non-trigger voltage	V_D = 67% V_{RRM}, $T_j = T_{jmax}$	0.3	V
P_{GM}	Peak gate power dissipation	Pulse width 1 ms	20	W
$P_{G(AV)}$	Average gate power dissipation		3	W
I_{FGM}	Peak gate current		10	A
V_{FGM}	Peak gate voltage (forward)		12	V
V_{RGM}	Peak gate voltage (reverse)		10	V

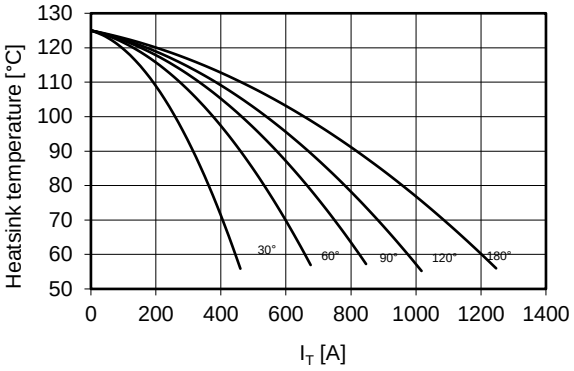
SWITCHING CHARACTERISTICS

di/dt	Critical rate of rise of on-state current	Non rep. - $T_j = T_{jmax}$	150	A/µs
dV/dt	Critical rate of rise of off-state voltage	$T_j = T_{jmax}$	1000	V/µs
t_q	Turn-off time, typ	$T_j = T_{jmax}$, I_T = 2000 A, di/dt = -5 A/µs	600	µs
		VR = 200 V, VD = 67% VDRM, dV/dt = 20 V/µs		

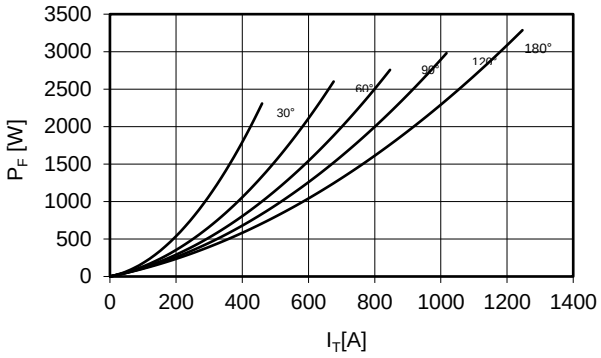
THERMAL AND MECHANICAL CHARACTERISTICS

$R_{th(j-c)}$	Thermal resistance (junction to case)	Double side cooled	0.017	°C/W
$R_{th(c-h)}$	Thermal resistance (case to heatsink)	Double side cooled	0.004	°C/W
T_{jmax}	Max operating junction temperature		125	°C
T_{stg}	Storage temperature		-40 / 140	°C
F	Clamping force ± 10%		22	kN
	Mass		600	g

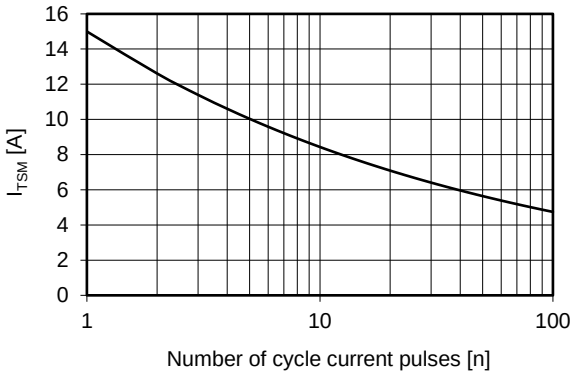
Current rating - sine wave



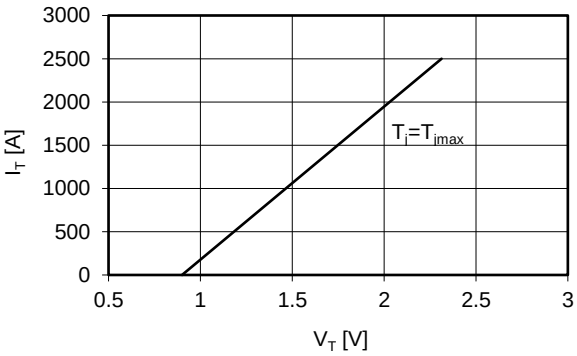
Power loss - sine wave



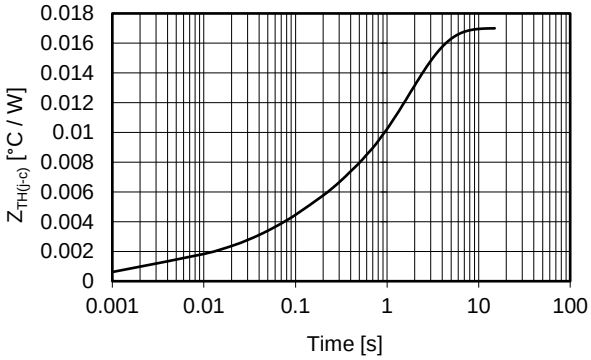
Maximum surge current d.s. cooled

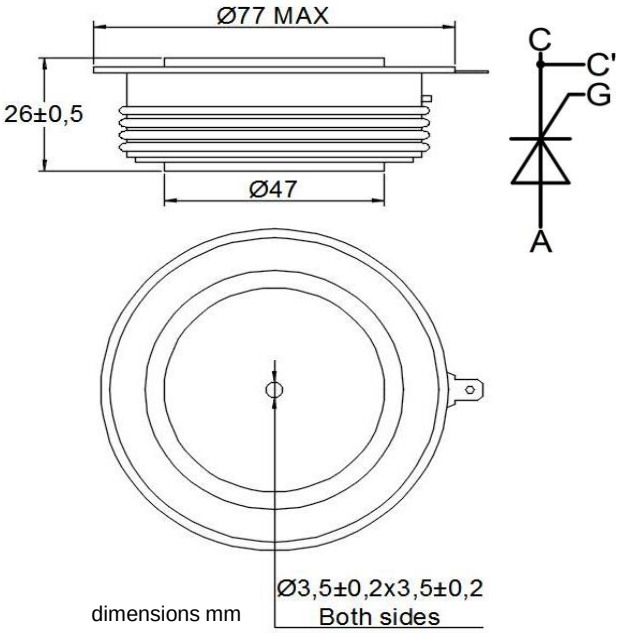


On-state voltage drop



Thermal impedance (j-c)





dimensions mm

Ordering information GPTP5125-VVGL

VV: blocking voltage / 100 (e.g. 42 for 4200 V)

G: trigger lead type (**S** = straight **T** = twisted **blank** = no leads)

L: trigger lead lenght x 100mm (**3 - 4 - 5 - 7 blank** = no leads)